

Neutron News



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FEATURING:
J-PARC



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1-MW Pulse Spallation Neutron Source (JSNS) of J-PARC

Instrument Suite for JSNS, J-PARC

Device Development for JSNS

countries and all enjoyed meeting in the modern environment of the Faculty of Mechanical Engineering and they appreciated the program, too, which included many new results and information about promising neutron imaging methods. It was encouraging to hear that new installations are operational or in preparation at many prominent places: places which formerly only

had neutron scattering on the list (ILL Grenoble – Neutrograph, TU Munich – ANTARES and NECTAR, HMI Berlin – CONRAD, PSI Villigen – CNR, and Korea – HANARO NR). Because of this, the quality in the technique will be further enhanced and the support for the industry improved.

Future international meetings on neutron imaging technology and its

application will be held in 2006 in the United States (the location is still to be determined) and in 2008 in Japan.

EBERHARD H. LEHMANN

*In the name of the organizers of
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CAS Holds First Workshop on Applications of Neutron Scattering

After the first moderator-target planning meeting for the Chinese Spallation Neutron Source (CSNS) project in April 2002 (see *Neutron News* 13(3), 2002), a workshop on Applications of Spallation Neutron Sources was held at the Institute of Physics (IoP) of the Chinese Academy of Sciences (CAS) in Beijing from August 3–6, 2004. The meeting gathered over 180 scientists from over 30 universities and research institutions in China to learn the plan of the CSNS project, recent worldwide development of spallation neutron sources, and scientific applications of neutron scattering, ranging from hard and soft matter physics/chemistry to engineering and biology.

The CSNS project was proposed in 2001 by CAS after a series of consultation meetings. Phase I of the project, led by Prof. Jie Zhang of IoP, was funded in December 2001 to conduct a feasibility study of building a medium-power (ISIS-like) spallation neutron source in China. It concluded with a plan of a 70 MeV linac and 1.6 GeV/25 Hz synchrotron accelerator that produces a proton current of about 62 μ A (100 KW). A detailed study of the moderator-target design including a mock-up tungsten target was completed recently. It appears that the project is ready for submission to the National Development and Reform Commission and is in a strong posi-



Over 180 scientists attended the conference to learn about the CSNS project and more.

tion for a final approval in the coming months by the government.

In parallel with the conceptual design efforts of the CSNS, a general meeting aimed at the introduction of the project and information exchange with prospective users was contemplated in 2002. After a one-year delay due to the SARS epidemic in 2003, this workshop was realized through the organization of IoP and the sponsorship of China Center of Advanced Science and Technology (CCAST).

The program comprised a series of invited talks given by R. Eccleston (ISIS, RAL), Z. Han (Inst. Chem., CAS), J.C. Li (UMIST), J. Lin (Peking

U.), M-Y Lin (NIST), C-K Loong (IPNS, ANL), Y. Ren (APS, ANL), F-W Wang (IoP), X-L Wang (SNS, ORNL), Y. Wang (Northeast U.), J. Xu (Carnegie Lab), J. Zhang (IoP, CAS), P. Zhang (IoP, CAS), and J-K Zhao (SNS, ORNL) on the CSNS project. Also included were presentations on neutron science and applications and a very well-attended panel discussion of user participation and future neutron beamlines for CSNS.

In view of the broad participation by scientists from many universities and reactor sources in China and the enthusiastic response to the proposed user program of CSNS, the workshop

Meeting Reports

successfully laid the groundwork for building a neutron user community in China. To this end, F-W Wang (e-mail: fwwang@aphy.iphy.ac.cn) has agreed to act as the interim secretary for the coordination of user contacts, mailing, and dissemination of newsletters. The goal is to eventually establish a national committee serving and acting on behalf of the interest of all the neutron users in China. The participants enthusiastically endorsed the assemblage of a general

neutron user meeting annually.

Preceding the workshop was the first Chinese Neutron Summer School, organized by IoP, with financial support from the National Natural Science Foundation of China. The school intended to provide a basic training on the method of neutron scattering to graduate students and researchers from China. More than 100 students participated in the school, which well exceeded the initial anticipated attendance.

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German Neutron Researchers Meet in Dresden

Every two years the German neutron user community meets at the German Neutron Scattering Conference. This year's event was organized by the Technical University of Dresden (by Prof. Loewenhaupt, Prof. Ruck, and Dr. Kreißig) and took place in Dresden from September 1–4, 2004. Approximately 180 participants discussed more than 120 contributions, ranging from instrumentation, magnetism, and solid state physics to materials science, soft matter, and biology.

The plenary lecture given by Prof. W. Kuhs from the "Geowissenschaftliches Zentrum Göttingen" about gas hydrates was an inspiring and colorful introduction into the possibilities for neutron scattering in geo-science and an outstanding opening of the conference. Followed by a variety of brilliant lectures by young scientists especially, the conference gave a comprehensive overview of the current state of neutron instrumentation, experiments, and applications. Following the tradition of the conference by defining one topic to be discussed in more detail, this year's contributions in the field of magnetism were a clear focus. For the bulk systems, exciting new results were presented on ordering phenomena and fluctuations in transition metal oxides. The experimental progress in the study of magnetic nanostructures by grazing incidence scattering is impressive and

many examples were given all the way from the study of the exchange bias effect to laterally patterned thin films.

A special highlight was the distinction of Dr. Hitoshi Endo with the Wolfram-Prandl-Preis for young scientists, which is awarded by the Komitee Forschung mit Neutronen (KFN, Committee for Research with Neutrons). The prize was named in memoriam of Prof. Wolfram Prandl, who died unexpectedly in September 2001. He was an experimental physicist and crystallographer who was extraordinarily capable of exciting and motivating young students.

The laureate Endo focused his work on the development and application of two-dimensional contrast variation in neutron small angle scattering. With this technique, he was able to identify functionally important polymers that can be used to increase the efficiency of commercially available surfactants. Surfactants decrease the surface tension of water and, for example, enhance the cleaning power of detergents. Endo also showed that two-dimensional contrast variation is not only applicable to the study of soft matter: He used it to investigate the process of bio-mineralization, in particular, the role of block copolymer additives for calcium carbonate crystallization.

Aside from the interesting scientific program, the Committee for Research with Neutrons (KFN) informed about



Dr. Hitoshi Endo receives the Wolfram-Prandl-Preis from Prof. Thomas Brückel (KFN-chairman).

the new developments in the German neutron landscape. The FRM-II near Munich has reached its nominal power and regular operation is scheduled to start this year. Next year, instruments will be moved from the research center in Jülich to the newly founded outpost at the FRM-II, followed by a shutdown of the FRJ-2 reactor in Jülich in 2006. In the long run, scientists from the FRG-1 at the GKSS Research Center Geesthacht will operate instruments at the FRM-II also. Therefore, in a close collaboration between the Technical University of Munich, several German universities, the national laboratories, and the Max Planck Societies, the German neutron community will join forces at its strongest and most modern research